

CLAIMS

What is claimed is:

1. A pneumatic tire, the tire comprising a tread, the tread comprising two circumferential grooves and a circumferentially extending column of tetragon shaped blocks located between the two circumferential grooves,
in the circumferential extending column of blocks, each block is separated from an adjacent block by an inclined lateral groove, the inclined lateral groove forming an angle between 10° to 25° with one of the circumferential grooves,
the tread being characterized by each block in the column having a circumferential length L at least equal to the normal pressure footprint length L_F of the tire.
2. The tire of claim 1 wherein for any straight line drawn in the lateral direction of the tread, the straight line passes through at least two circumferentially adjacent blocks in the circumferentially extending column of blocks.
3. The tire of claim 1 wherein for any straight line drawn in the lateral direction of the tread, the straight line passes through at least three blocks in the circumferentially extending column of blocks.
4. The tire of claim 1 wherein a straight line drawn in the lateral direction of the tire at the mid-length, $\frac{1}{2} L$, of the block passes through at least three blocks in the circumferentially extending column of blocks.
5. The tire of claim 1 wherein the axial distance between the two circumferential grooves being in the range of 15 to 50% of the tread width.
6. The tire of claim 1 wherein tread is divided at a tread centerline into two tread halves and the two circumferential grooves are located in one tread half.

7. The tire of claim 6 wherein one of the two circumferential grooves is located on the tread centerline.
8. The tire of claim 1 wherein the tread is further comprised of a second circumferentially extending column of parallelogram shaped blocks located between a pair of circumferential grooves, the blocks in the second column being separated by inclined lateral grooves, the inclined lateral grooves in the first column and the inclined lateral grooves in the second column being inclined in opposing directions relative to a tread centerline.
9. The tire of claim 8 wherein the tread is divided at the tread centerline into two tread halves and one of the columns of blocks is located in each tread half.
10. The tire of claim 1 wherein the circumferentially extending column of blocks is axially centered on the equatorial plane of the tire.
11. The tire of claim 1 wherein each block has a pair of opposing sides forming a wall of the circumferential grooves, the pair of sides being circumferentially spaced by a distance d in the range of 20% to 60% of the circumferential length L of the block.
12. The tire of claim 1 wherein each block has a pair of acute angled corners, at least one of the acute angled corners being chamfered.
13. The tire of claim 1 wherein the circumferential grooves have a pair of opposing groove walls, one of the groove walls forming one side of the parallelogram shaped blocks and having a radially outer portion inclined at a greater angle relative to the radial direction of the tire than the radially inner portion of the groove wall.
14. The tire of claim 13 wherein the radially outer portion of the groove wall is inclined at least 10° greater than the radially inner portion of the groove wall.
15. The tire of claim 1 wherein the inclined lateral grooves have a width less than the width of the circumferential grooves.

16. The tire of claim 1 wherein the blocks have a width W_B , measured perpendicular to the longest sides of the blocks, in the range of 15% to 65% the distance between the circumferential grooves.
17. The tire of claim 1 wherein alternating blocks in the circumferentially extending column have different axial widths.
18. The tire of claim 1 wherein alternating blocks in the circumferentially extending columns have different circumferential lengths.
19. The tire of claim 1 wherein the tetragon shaped blocks have sides partially forming the two circumferential grooves, and at least one of the sides is inclined at an angle greater than 0° relative to a tread centerline.
20. The tire of claim 1 wherein each block in the columns has a circumferential length of 100-400% of the normal pressure footprint length L_F of the tire.